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THE RHINE. No. V.

THE MICE-TOWER, AND CASTLE OF EHRENFELS

THE RHEINGAU—THE MICE-TOWER—THE CASTLE OF EHRENFELS.

Here Nature stood still, strewing with lavish hand,
Her living beauty over hills and valleys,
With lingering step
Adorning the landscape

In a former paper* we gave a description of the little duchy of Nassau, which is bounded along its southern and western frontiers by the river Rhine. We now proceed to speak of that remarkably fertile and beautiful portion of it which lies between the border of the river and the Taunus Mountains, and which is known as the *Rheingau*, or district of the Rhine. It is a narrow strip of country, rather more than nine English miles in length, and of a varying breadth, never exceeding four miles. Its eastern limit, or the beginning of it to a traveller descending the Rhine, is at Wallauf, a little below Mentz, and its western limit or termination at Lorchausen; at least the tract comprised between these limits is that to which the name of Rheingau is generally applied by tourists, though, properly speaking, its eastern extremity is at Schierstein, a little above Wallauf, and its western extremity a little above Lorchausen.

The Rheingau is celebrated over Europe for the loveliness of its scenery and the rich produce of its soil. Among the different wines with which we are acquainted at the present day, those of the Rhine hold a high place; and of the wines of the Rhine there are none which can be put in comparison with those which are produced in the Rheingau.

This paradise, (says a German writer, the Baron Von Gerning,) like the region of Naples, may be styled a portion of heaven fallen down to the earth. The majestic Rhine lingers in his course through it, and in honour of it forms nine verdant islands. The solemn Taunus throws his woody arms around it to protect it from the rough and boisterous north. Vine-covered hills, fields, and meadows, and human dwellings, are intermingled most agreeably; and in this Elysium we fly from place to place, in an overpowering ecstasy which defies description. Hallgarten, a village in the forest, with its Hyndelberg adorned with vines, lies in a charming situation close to the wood-covered heights. The well-preserved castle of Volrats has a most picturesque appearance amid its soft hills behind the beautifully enthroned Johannesberg. Further back the ruins of the burg of Scharfeustein, on a rocky vine-covered mountain, towers above the wooded valley of Kiderich. The mild vineyards stretch sweetly round the golden Markt-brunner Stralenberg, down to a narrow causeway (which is throughout protected by an old railing, but cut by a parapet wall), between Erbach and Hattenheim, where the important frontier fountain pours itself with a pleasing murmur into a sandstone basin (in the chapel, fitted up with elegant seats, erected in honour of it in the celebrated vintage-year 1811,) in order that travellers may refresh themselves with the water as well as the wine of Mark-Brunn. A beautiful range of vine-hills again follows; we approach the Johannesberg, the Rothenberg, (so called from the red colour of its soil), and the Niederwald, and everything assumes a more gay and southern appearance. A road of five leagues in length from Schierstein, the commencement of the modern Rheingau, to Rüdesheim, comes

* See *Saturday Magazine*, Vol. XI., p. 233.

in contact with eight other places, namely, Walluf, Elfeld, Erbach, Hattenheim, Oesterich, Mittelheim, Winkel, and Geisenheim, most of which are surrounded by beautiful country seats, presenting a series of the most agreeable pictures to the delighted eye, and putting the friend of antiquity in mind of the villas of the Romans. Geisenheim, the streets of which are still unpaved, and which may be considered as a large village, has something distinguished and solemn about it in this respect. The Rhine between this place and Galshein, is more than half a league in breadth, which is the greatest breadth it ever attains between Basle and Holland, and the green-coloured majestic stream has now all the appearance of a lake.

The Rheingau was originally a free Salic possession, and was divided into the Upper and Lower Bounds; the former comprehending the district along the mountains, and the latter the district along the banks of the river. It was next divided into Rhine townships and Forest townships; the frontier of the latter being protected by five strong bulwarks, which lowered immediately above the principal passes. Beyond this line were some Forest villages and cantons, over which the rulers of the Rheingau possessed a criminal jurisdiction, and which took part in the district assemblies. The whole territory was protected on the forest side by a frontier intrenchment, consisting of hedges and underwood tangled and plashed together, a species of barricade called *gebück*, which enabled its defenders in the Thirty Years' War, to obstruct for some time the progress of their antagonists.

In the stirring and vigorous times of the middle ages, the inhabitants of the Rheingau were exposed to frequent feuds. In the thirteenth century they still had their particular *gaugraves*, or "counts of the gau." This noble tract of country passed by degrees into the hands of the Archbishops of Mentz; and when it was finally united to their domains, the place of the *gaugraves* was supplied by vicegerents. The inhabitants had their separate constitution, defensive institutions, liberties and privileges, without the confirmation of which they would not pay homage to a new ruler. Additional rights and liberties were conferred on them by the Archbishop Adolphus the Second, whom they assisted in 1462 against Diether and the citizens of Mentz. They were also exempted from feudal service and compulsory military duty:

They have a common saying among them that "the air of the Rheingau makes a man free." The old national maxim of Germany, "What we were not consulted in, that we will not assist in executing," was peculiarly in force among them. According to the descriptions of former times, the Rheingau was "a free, obedient, incomparable portion of the territory of the church of Mentz." In return for the immunities respecting markets and customs, which they enjoyed, the inhabitants of the Rheingau preserved from the year 1200 the right of defence of the town of Mentz, a right which they still exercised in 1792. . . . . The inhabitants of the Rheingau are kind, frank, hospitable, and, generally speaking, endowed with a certain innate hilarity which well becomes them. As the district was itself separated from the adjacent country by the Rhine and a trench, its inhabitants were in like manner a separate people. They yet form, as it were, only one family, especially the inhabitants of Rüdesheim, who are almost all related to each other, and who seldom marry elsewhere. Persons when they meet greet each other with the words, "Good time!" which, in a bad time, sounded doubly grateful.

The most delightful period of the year in the Rheingau is the season in which the vine puts forth its blossoms, when the whole country is filled with the most delightful fragrance, and that in which its ripened fruits are gathered and their juice expressed for the wine-making. The men and women connected with the cultivation of the vine at times form processions with music and singing; in the ceremonies which accompany the end of the vintage a female is elected "wine-matron." With respect to climate, the Rheingau is spoken of as being indisputably the most southern zone in Germany. The road from Geisenheim to Rüdesheim is the most beautiful of the whole Rheingau; and a row of walnut and elm-trees affords also that grateful shade which is the more to be valued, because it is so seldom met with, in this wine-region, where greater attention is generally paid to the culture of the grape than to that of ornamental or fruit-trees.

The appearance of the Rheingau from the overhanging hills which divide it from the inland upper country of Nassau is very fine. The author of *Bubbles from the Brunnens of Nassau*, speaking of a view from one of the summits, a hill near the monastery of Eberbach, characterizes it as being, without any exception, the finest he had witnessed in the country.

Uninterrupted by anything but its own long narrow islands, I beheld the course of the river from Johannisberg to Mainz, which two points formed from the grotto where I stood an angle of about one hundred and twenty degrees. Between me and the water lay, basking in sunshine, the Rhinegau covered with vineyards, or surrounded by large patches of corn which were evidently just ready for the sickle; but the harvest not having actually commenced, the only moving objects in the picture were young women with white handkerchiefs on their heads busily pruning the vines; and the Cöln [Cologne], or as it might more properly be termed, the *English* steam-boat, which immediately before me was gliding against the stream towards Mainz. On the opposite side of the Rhine an immense country highly cultivated, but without a fence, was to be seen.

The Baron Von Gerning compares this enchanting tract of country when viewed from an adjacent height, to "a carpet of delight, skilfully woven by the formative hand of nature."

> A vale of pleasance spreads beneath our feet;
> The plains adorned with golden grain, the heights
> With golden grapes. Village to village joins;
> For where the earth the lightest toil rewards,
> With lavish hand does man delight to build.

The natural advantages of the Rheingau will appear the more strikingly to the traveller, if he first traverse a portion of the upper country of Nassau, and then descend to the Taunus mountains. Every step that he takes in the descent will introduce him to a more genial climate and vegetation. In the summer-season the contrast will be particularly striking. Instead of breathing the keen light mountain air which appertains to the upper country, he feels himself overpowered by the burning sun, which is hurrying to maturity the abundant crops around him. The luxuriance which Nature has imparted to the vegetation of the Rheingau is not more remarkable than its variety. A writer already quoted, took the trouble to note down the different crops which he passed in riding from Frauenstein, which lies low in the Taunus range, to Mentz; and he gives the following list as well calculated to convey "some idea of the produce of the highly-favoured belt or district of Nassau, (known by the name of the Rheingau,) which lies between the bottom of the Taunus hills and the Rhine:—

Vineyards,	Potatoes,	Horse chestnuts,
Hop-gardens,	Carrots,	Almonds,
Fields of kidney beans,	Turnips,	Quinces,
Tobacco,	Clover of various sorts,	Medlars,
Hemp,	Grass,	Figs,
Flax,	Lucerne,	Wild Raspberries,
Buck-wheat,	Tares,	—— Gooseberries,
Kohl-rabi,	Plum-trees of various sorts,	—— Strawberries,
Mangel-wurzel,		Currants,
Fields of beans & peas,	Standard apricots,	Gooseberries,
Indian corn,	Peaches,	Whortleberries,
Wheat of various sorts,	Nectarines,	Rhubarb,
Barley,	Walnuts,	Cabbages of all sorts,
Oats,	Pears, of various sorts,	Garlick,
Rye,	Apples, of various sorts,	Tomatos
Rape	Spanish chestnuts,	

A part of the Rheingau mountains lying behind Rüdesheim, is occupied by the forest of the Neiderwald. It is richly wooded; and the charming situation of its summit induced the former possessor to build an edifice on it, which cost him above half a million of florins, (about 55,500*l.*), and which is very much visited. The principal part of it is a hunting castle, which stands at the extremity of the forest near the Rhine; its position, however, is not quite in front, so that the view which it commands of the Rhine, although very romantic, is confined.

The view from a small temple over the best part of the Rheingau, (says Von Gerning,) the picturesque islands of the Rhine, and the majestic stream which spreads itself out like a lake, and in which everything is reflected as in a mirror, is altogether unique and exquisitely beautiful. At one time we imagine ourselves by the lakes of Zurich and Bienne; at another by the lake of Lugano, and then again we feel ourselves transported to the charming regions of Italy, which, however, possesses no river like the Rhine.

A still more beautiful view is obtained from the summit of an old tower called the Rossel, which stands at the extremity of the cliff overhanging the river, and lying above the ruined castle of Ehrenfels, whence the spectator sees the Rochusburg beneath him on the opposite side of the river, the winding river Nahe almost at his feet, with the town of Brugen and its ancient ruins, and the Mausethurn or Mice-tower on its little island in the middle of the Rhine. This prospect is thus described by the author of *Bubbles from the Brunnens of Nassau*:—

We ascended through a noble oak wood, until reaching a most celebrated pinnacle of the Taunus mountains, we arrived at the Rossel, an old ruined castle, which standing on the Niderwald, like a weather-beaten sentinel at his post, seemed to be faithfully guarding the entrance of that strange mysterious chasm, through which, at an immense depth beneath, the river was triumphantly and majestically flowing. Although the view from the ruined top of this castle was very extensive and magnificent, yet the dark, struggling river was so remarkable an object that it at first completely engrossed my attention. While the great mass of water continued to flow on its course, a sort of civil war was raging between various particles of the element. In some places an eddy seemed to be rebelliously trying to stem the stream, in others the water was slowly revolving in a circle;—here it was seen tumbling and breaking over a sunken rock—there as smooth as glass. In the middle of these fractious scenes, there lay, as it were, calmly at anchor, two or three islands, covered with poplars and willows, upon one of which stood the ruins of the Mausethurn, or tower of that stingy Bishop of Mainz, famous, or rather infamous, in the history of the Rhine, for having been gnawed to death by rats. On the opposite side of the river were to be seen the Rochus Capille, a tower built to commemorate the cessation of the plague, the beautiful castle of Rheinstein, the residence of Prince Frederick, of Prussia, the blue slated town of Brugen, with its bridge crossing the Nahe, which running at right angles into the Rhine, here delivers up its waters. The difference in cast of colour between the two rivers at their point of meeting is very remarkable, the Rhine being clear and green, the Nahe a deep muddy brown; however, they no sooner enter the chasm in the Taunus hills, than the distinction is annihilated in the violent hubble-bubble commotions which ensue. The view beyond these home objects now attracted my attention. The Prussian hills opposite were richly clothed with wood, while on their left lay prostrate the province of Darmstadt, a large brown flat space studded, as far as the eye could reach; with villages, which, though distinctly remarkable in the foreground, were yet scarcely perceptible in the perspective. Behind my back was the duchy of Nassau, with several old ruined castles perched on the pinnacles of the wood-covered hills of the Niderwald.

The endless succession of ancient dilapidated castles which impart such "a Gothic and poetical interest" to the banks of the Rhine, have been generally spoken of by travellers with all the rapture of romantic enthusiasm; but there are some writers who have viewed them in a light rather colder but more correct As mere objects in the scenery, they are not the most attractive sort of castellated ruins;—the eternal round tower, or "stone cylinder," which generally stands out most conspicuously, is spoken of as the very reverse of picturesque:—

There is besides a moral feeling attached to them, (to quote the author of a *Family Tour*,) that is apt to carry the recollection back to those days of feudal tenure when murder and robbery were hardly considered as crimes; and when many an unhappy victim lingered out a miserable existence in the cells and dungeons of these ancient ruins, which still remain as memorials of the villainous scenes that have been transacted within their walls. A French writer, however, thinks otherwise; he tells us how delighted he feels in transporting himself in imagination to those remote ages of ancient chivalry—those ages, as he calls them, of valour and virtue—in imagining himself to be surrounded by those *preux chevaliers*, the protectors of weakness, the defenders of a sex which knew no other ornament but delicacy and gentility. Perhaps he would have been nearer the truth, if instead of preux chevaliers he had painted these castles to his mind as the retreats of bands of brigands.

This is unquestionably the less romantic, but by far the more correct mode of viewing the subject. We may be unwilling to adopt it always, because the attractions of chivalry are apt to captivate our imaginations, and the blessings which we fortunately enjoy under the present system of European civilization, leave us unable to estimate the weight of sufferings to which all peaceable persons were exposed in the age when it flourished. The very ruins that we speak of, themselves tell the tale of the oppression to which they were made subservient; in most cases the lords of these ancient castles provoked their destruction by their own rapacity. Some six or seven hundred years ago, instead of displaying their prowess against the Saracens and Turks abroad, they preferred the more profitable and less perilous occupation of pillaging poor merchants and peaceful towns at home; their feats in this line became at last so oppressive, that a general league was formed against them among their victims. The result of it was successful; the citizens were too strong for the knights, and the haunts of the "patrician highwaymen" were many of them burnt into the picturesque ruins, which, with a little aid from time, they still exhibit. Doubtless, in some cases, a castle may have been erected by its master to protect the traders—or (what was something gained) to secure them from being pillaged by anybody but himself; but, in all probability, for every one that was so built to foster the interests of commerce, there were a dozen devoted to the plunder of the poor merchants who were engaged in carrying it on.

None so little enjoy life, and are such burdens to themselves, as those who have nothing to do. The active only have the true relish of life. He who knows not what it is to labour, knows not what it is to enjoy. Recreation is only valuable as it unbends us; the idle know nothing of it. It is exertion that renders rest delightful, and sleep sweet and undisturbed. That the happiness of life depends on the regular prosecution of some laudable purpose, or lawful calling, which engages, helps, and enlivens all our powers, let those bear witness who, after spending years in active usefulness, retire to enjoy themselves,—they are a burden to themselves.—Joy.

To see nothing out what is good is impossible, and to say nothing but what is good would be deceitful; but it is the part of both wisdom and charity to see all that there is, and to say all that we can. There is a great deal of latent good which must be looked for before it can be found, but which is worth finding, and, therefore, worth looking for. —*Quarterly Review.*

ILLUSTRATIONS OF THE BIBLE FROM THE MONUMENTS OF ANTIQUITY.

No. X.

The Plagues of Egypt.

The portion of history on which we are about to enter has always been regarded of the highest importance. The signs and wonders which God "multiplied in the land of Egypt," (Exod. vii. 3,) were so stupendous in their nature, and decisive in their character, that they have ever been the first objects of attack by the sceptic and the infidel. On this account we shall a little enlarge the scope of our illustrations, and combine with the monumental records those independent traditions of Arabia which have been preserved in the Koran and the early Saracenic histories. It has been asked, why memorials of such great events as the ten plagues have not been discovered on the Egyptian monuments? we have anticipated a decisive answer by showing that the objects of divine vengeance were not the native Egyptians, but an intrusive race of conquerors; and this view of the case is confirmed by the Arabian writers, who declare that the Pharaoh by whom the Israelites were persecuted, was a chieftain named Walid, of the house of Amalek. There can be no doubt that the different wandering tribes of Western Asia, frequently united in their plundering expeditions into Egypt; and whether Pharaoh the Fourth was an Amalekite or not, the fierce animosity of the Amalekites against the Israelites is in a great degree explained by the tradition that the deliverance of the latter precipitated the overthrow of the empire which the house of Amalek had established in Lower Egypt.

The narrative of the Grecian historians confirms this explanation; they tell us that the expulsion of the Hyksos from Lower Egypt was accomplished by one of the Theban kings, but they do not explain by what event the foreign conquerors were so weakened as to become the prey of those over whom they had triumphed so recently and so decisively. The only plausible reason that can be assigned for the sudden prostration of the Hyksos, is the overthrow of Pharaoh's host in the Red Sea; after such a calamity the intrusive conquerors must have been unable to maintain their ground, and must have been as decisively vanquished as the monuments represent them to have been. National vanity induced the Egyptians to suppress the fact that God's interference in behalf of another people was the chief cause of their national triumph; just as, in modern times, in many Russian accounts of the battle of Pultowa, the defeat of Charles the Twelfth is ascribed wholly to the prowess of Peter the Great, and not a word is said of the intense frost which had previously destroyed the flower of the Swedish army.

This view of the case serves also to explain another objection very frequently urged by infidels, the absence in Scripture of any reference to the name and conquests of Sesostris; but if the preceding reasoning be correct, that mighty victor must have acquired his trophies while the Israelites were wandering in the desert, and necessarily removed from his line of march. It is, perhaps, no groundless conjecture, that God designedly placed his chosen people in sequestered security, while the Egyptian victor pursued his rapid career and prepared the way for more permanent conquests.

When Moses and Aaron were sent to bear the message of Jehovah to Pharaoh, each held a rod, which seems to have been a symbol of priestly dignity among the Egyptians, as it is still among many oriental nations. The Arabian traditions respecting this rod are manifestly borrowed from the fables of the Talmud, but they are so far worthy of notice, as they prove that a rod was considered the ensign of a prophet or an inspired person, for they say it was given to Moses by his father-in-law, Shoaib or Jethro, whom all the traditions represent as a preacher of the true religion.

The figure of Ammon, a well-known Egyptian deity, in the accompanying engraving, bears in the right hand the sacred *tau*, supposed to have been the symbol of vital energy, and in the left a rod or sceptre, such as we may suppose Moses and the Egyptian magicians to have used, especially if, as seems exceedingly probable, the Egyptian magicians belonged to the sacerdotal caste. When Moses and Aaron appeared before Pharaoh, the latter "cast down his rod before Pharaoh and before his servants, and it became a serpent." We have already seen from the monuments that something of a sacred character was attributed to serpents by the ancient Egyptians, and that the first appeal made to Pharaoh was consequently the most likely to influence his decision.

"Then Pharaoh called also the wise men and the sorcerers; now the magicians of Egypt, they also did in like manner with their enchantments." (Exod. vii. 11.) There are three different words used here to designate the Egyptian enchanters,—*chakamím* which simply signifies "wise men," but in Scripture is usually confined to those who attend in royal courts; *mekashephím*, which signifies "mutterers of incantations," and comes from a root primarily signifying "to pray;" but this root and its derivatives is restricted in Hebrew to idolatrous services; and *chartummim*, which is derived from a word signifying "engraving," and therefore most probably means "persons skilled in hieroglyphics." The word *lehatim*, translated "enchantments," also signifies "flames," and this we shall see is of some importance in examining the character of the magicians.

It deserves to be remarked in the first place, that all the eastern traditions concur in representing the wonders of the Egyptian magicians as pure deceptions. This is the express testimony of the Talmud

and the Koran. Such arts might not easily have been imposed upon a native Egyptian, but a barbarous foreigner like the Pharaoh of the Hyksos, might easily have been duped by the superior skill of "wise men" instructed in the knowledge and arts of the Egyptians. When the descendants of Timúr established their empire at Delhi, they were similarly dazzled by the tricks of the Hindú conjurors. The Emperor Jehangueir informs us, that even his father, the enlightened Akbar, consulted some of these soothsayers before setting out on an expedition, and found their predictions verified by the event. He also gives us the particulars of an exhibition in his own court by some jugglers from Bengal, which far surpasses that of the Egyptian sorcerers in the court of Pharaoh. The following extracts from the emperor's autobiography, cannot fail to interest the reader.

They (the jugglers) took a small bag, and having first shown that it was entirely empty, one of them put his hand into the bag; on withdrawing his hand again, out came two game cocks of the largest size and great beauty, which immediately assailing each other, fought with such force and fury that their wings emitted fire at every stroke. This continued for the full space of an astronomical hour, when they put an end to the combat by throwing a sheet over the animals. Again they withdrew the sheet, and there appeared a brace of partridges with the most beautiful and brilliant plumage, which immediately began to tune their throats as if there were nothing human present; pecking at worms with the same sort of chuckle as they are heard to use on the hill side. The sheet was now thrown, as in the other instance, over the partridges, and when again withdrawn, instead of those beautiful birds, there appeared two frightful black snakes with flat heads and crimson bellies, which with open mouth and head erect, and coiled together, attacked each other with the greatest fury, and so continued to do, until, as it appeared, they became quite exhausted, when they fell asunder. The sheet was thrown over as before, and when finally withdrawn, there appeared not a vestige of the snakes nor of anything else.

One of the seven men stood up before me (says the emperor,) and setting open his mouth, out came the head of a snake. Another of the men seized the snake and drew it out by the neck to the length of four cubits. This being disposed of by casting it to the ground, another followed in the same manner, and so on to the number of eight, none of them being less than four or five cubits in length. These being all cast loose upon the ground, were immediately seen writhing in the folds of each other, and tearing one another with the greatest fury; a spectacle not less strange than frightful.

It would be no difficult matter to collect numerous anecdotes of the wonders performed by the conjurors and snake-charmers of the East; some of which even now puzzle enlightened Europeans, and consequently may well have deceived such a prince as the fourth Pharaoh. But the miracle wrought by Moses was uncontrovertibly proved to be supernatural, for Aaron's rod swallowed up the rods of the magicians.

Untaught by this unequivocal manifestation of the Divine power, the wicked ruler of Egypt refused to let the Israelites depart, and the first plague was inflicted both as a chastisement and a warning:—

And Moses and Aaron did so, as the Lord commanded; and he lifted up the rod, and smote the waters that were in the river, in the sight of Pharaoh and in the sight of his servants; and all the waters that were in the river were turned to blood. And the fish that was in the river died; and the river stank, and the Egyptians could not drink of the water of the river; and there was blood throughout all the land of Egypt. (Exod. vii. 20, 21.)

The most striking monument of the severity of this plague is the river itself. From the earliest ages the Nile has been the great source of support to the inhabitants of Egypt; by its overflowings the land is fertilized; in every season its bed is nearly full, and its inundations occur at the period of the year when the heat of a scorching sun has dried up all other streams. In most lands, the overflowing of a river is the signal of wide-spreading calamity, and diffuses universal consternation; the overflowing of the Nile, on the contrary, is the announcement of fertility to all who dwell upon its banks; the rising of the waters is hailed by benedictions, thanksgivings, and songs of triumph; even the slave bowed down by toil, and the Fellah sinking under oppression, share the general joy, and for a day forget the cruelties of man in contemplating the bounties of nature. The ancient Egyptians ascribed a divine origin to the river, believing it an emanation from Knouph, or Cneph, whom they regarded as the father of the gods; and on one of the monuments, that deity is depicted pouring forth water from a vase, as a type of the inundations which were to fertilize the land. Even at the present day, many of the native Egyptians, both Christian and Mohammedan, believe that the Nile flows from the terrestrial paradise, while others think that it is a copy of a celestial Nile which flows through the mansions of the blessed.

The waters of the river are supposed to be peculiarly wholesome and sweet; indeed, the Turks frequently stimulate themselves to artificial thirst by eating salt, in order that they may drink the more of this delicious beverage. All travellers, ancient and modern, unite in praising the water; it is even asserted by some, that it has valuable medicinal qualities, and that the cattle which drink of it become more fat and more fruitful than those fed on the banks of any other river. A river so justly valued and even revered as a divinity, was now rendered an object of disgust and abhorrence; it is therefore impossible to conceive a miracle more striking or more likely to effect the purpose for which it was designed.

ON WRITING MATERIALS.

No. III.

The History of a Black-Lead Pencil.

There are probably but few of our readers who imagine, while using a black-lead pencil, that that useful little instrument is, and long has been, a source of much wealth to some of our countrymen. Such, however, is the case; for nearly three hundred years, the black lead (the essential part of a black-lead pencil,) has been derived from our own mineral treasures in a state of greater purity, and in more abundant supply than in any other part of the world. It is a remarkable circumstance in the mineralogical history of our globe, that almost every substance which is useful to man, appears to have some particular locale in which it is found more abundantly than at any other spot. This locality, therefore, becomes the mart from which other nations are supplied; until at length, a new deposit, or a new mine, is discovered in another place, and draws away, and often with ruinous effect, the traffic from the before-favoured spot. Black lead, for instance, has been found in many parts of the world, in a state of greater or less purity; but when the celebrated Borrowdale mine*, in Cumberland, was discovered, the others shrunk into insignificance, and the "crayons d'Angleterre" have become the standard of excellence all over the Continent. It has lately been stated in an American scientific work, that a black-lead mine was worked in Massachusets by the French residents about a century ago; but it was long abandoned, and has only recently been prosecuted, but with such success that it promises to yield a very abundant supply.

* See *Saturday Magazine*, Vol. I., p. 24.

In order to give a tolerably complete history of a black-lead pencil, we will first describe the materials used, and then the process of manufacture. In the first place we must state, that black-*lead* pencil is altogether a misnomer, there being not a particle of lead in the manufacture. The marking material is plumbago, or graphite, a compound of carbon and iron, in the proportion of nine parts of carbon to one of iron. This mineral is of a dark iron-black colour, passing into steel gray. It occurs in a massy form, in kidney-shaped lumps, varying from the size of a pea to much larger lumps, and is found in beds of quartz, and in masses of calcareous earth. It has a glistening metallic lustre, and the fracture presents a texture somewhat between scaly and granular. The large masses are slaty in their appearance, and occur generally in distinct concretions. It takes a considerable polish by rubbing, and, as is well known, gives a dark lead-gray streak when drawn along paper or wood. It is unctuous to the feel and not very brittle, and about twice as heavy as its own bulk of water. The large quantity of carbon which it contains, renders it peculiarly fitted to the purposes of the chemist, in the form of crucibles, as it will bear an intense heat. The other purposes to which it is applied, are to relieve friction in the axes and pivots of wheels. Its power this way may be illustrated by rubbing a button first on a plain board, five or six times, and applying it to a bit of phosphorus, the latter will immediately burn. When rubbed on a surface covered with plumbago, double or treble the friction will be required to produce the same effect. Plumbago is also used to give a polish to shot and gunpowder, to give a preservative coating to cast iron, and to mix with clay to form a lining for furnaces. At North Carolina shingles are coated with a mixture of black lead and oil, which is said to be an excellent preservation against fire. For all these latter purposes, however, coarse and impure black lead is employed.

Borrowdale, to which we have alluded, is situated in the heart of the lake district of Cumberland, a district which, for natural scenery and for poetic association, connected with the eminent men who have lived, and still live there, is a favourite spot with English tourists. In the reign of Elizabeth there was a mine of copper and lead in the immediate vicinity, which was worked by some Germans; but on finding some small veins of gold and silver in the mine, a contest arose with the crown as to who should possess the precious metals; Elizabeth gained the contest, and the Germans soon afterwards left the country. About that period, however, the Borrowdale black-lead mine was discovered, and soon drew attention to its valuable contents. Its celebrity gradually increased, and with it an extensive system of purloining. Sometimes the workmen in a neighbouring mine would cut through into the black-lead mine and carry off quantities of the contents. At another time a party of miners overcame a guard placed at the entrance of the mine, and kept possession of the whole place for several days. An Act of Parliament was obtained in the last century, inflicting severe penalties on all depredators, and since then an improved mode of protection has been devised.

The mountain which contains this valuable mine, is situated at a few miles from Keswick, and is about 2000 feet high. The entrance to the mine is about 1000 feet from the level of the ground, from which spot there is an excavated cavity, extending 660 feet horizontally into the body of the mountain; this passage has a railway laid along its whole length, and is used to convey the ore from the bowels of the mountain to the entrance

A few particulars concerning this mine were given by Campbell, in his Political History of Great Britain, about fifty or sixty years ago. He says,—

The mine before mentioned is private property, is opened but once in seven years, and the quantity known to be equal to the consumption in that space sold at once; and as it is used without any preparation, it is more valuable than the ore of any metal found in this island. But there is nothing improbable, and much less impossible, in supposing that other, and it may be many other, uses will be discovered in medicine, painting, dyeing, varnishing, or pottery, which would certainly contribute to raise the value of a mineral peculiar to this country, and with the nature of which, though so long in our possession, we are still so imperfectly acquainted.

Some part of this surmise has been realized since Mr. Campbell's days, and it may all be so. By far the best account of this mine which we have met with is that of Mr. Parkes, who visited it in 1814.

There are two entrances to the mine,—a small one by which the workmen descend by means of a flight of steps, and the other is a large horizontal one, capable of admitting hand-carts and wheel-barrows for the removal of the rubbish and loose earth by which the black lead is enveloped, and through this entrance the water passes off which constantly runs through the mine.

In order to secure the vast treasure which is contained within this mountain, the proprietors have now erected a strong brick building, consisting of four rooms on the ground floor, one of which is immediately over the opening by which the workmen enter the mine as they go to their work. This opening is secured by a trap door, and the room conected with it is called the dressing room, for when the men enter it, they strip off their usual clothes, and each of them puts on a dress suitable for working in a mine. The men work six hours each, and then they are relieved by others.

As the black lead is cleaned, it is put into firm casks which hold about one hundred and twelve pounds each, and these are sent by waggon to the warehouse of the proprietors in London. Formerly, this mine was opened but once in seven years: but in consequence of the demand being greater, and the quantity which they have discovered not being so large, it has been found expedient to open it and dig for ore during six or seven weeks every year. During this time the mine is guarded night and day. In consequence of the mines having been opened in late years every Summer, they now raise all the black lead they find, and then the mine is securely shut in the following manner:—The workmen wheel back the rubbish which had been removed at the opening of the mine, and this is laid on in a continued heap, to the amount of some hundred cart loads, which securely blocks up both the passages into the mine. The door is then locked as well as the door into the house, and all the men thus leave the premises in a state of safety; for the mass of rubbish which is thus wheeled in at the large door, dams up the small rill of water which usually flows through the mine, and thus has the effect of flooding it completely. Thus, if an attempt were made to break the house and enter the mine by that road, the robbers would find that the water had risen to such a height as would drown any individual who should attempt to search for the ore.

Our readers may be surprised at the extreme caution displayed in every part of these processes, as described by Mr. Parkes, to prevent purloining, &c., but this surprise will cease when we recollect the value of the ore; the market price of the best black lead being nearly half the price of pure silver, about two guineas per pound. Various shafts are excavated in this mine, some of which appear to be exhausted, which occasions a search for new veins in other directions. One mass was discovered in 1803, measuring twenty-one yards and a half in length, and two and a half in diameter.

The property of this mine is shared between a a few individuals, and to show its great value, Mr. Parkes states that in sixteen years, from 1798 to 1814, 2552 casks, of one hundred and twelve pounds each, were procured from this mine: of which 736

were fine, and 1816 coarse. This we shall find to give an average, one year with another, of 17,864 lbs.; indeed, the nett profits have been known to be between 20 and 30,000*l.* in one year. The reason why this mine is so particularly valuable, is to be found in the circumstance that the ore requires scarcely any labour to fit it for the market, it being originally almost in a pure state.

Perhaps one of the most remarkable circumstances connected with plumbago is the mode in which it is sold. After the quantity necessary for supplying the market during the ensuing year is extracted from the mine, and the latter closed up, the product is carried in small fragments of about three or four inches long, to London, where it is exposed for sale at the black-lead market, which is held on the first Monday of every month, at a public house in Essex Street, Strand. The buyers, who amount to about seven or eight individuals, examine every piece with a sharp instrument to ascertain its hardness, those which are too soft being rejected. The individual who has the first choice pays forty-five shillings per pound, the others thirty shillings. But as there is no addition made to the first quantity in the market during the course of the year, the residual portions are examined over and over again, until they are exhausted.

Thus much for the black lead. The wooden case or exterior of black-lead pencils is usually made of cedar. Of cedar-trees there are many varieties, but the red cedar used for pencils is the Virginian cedar, (*Juniperus Virginiana,*) of North America.

To prepare the cedar for the pencils, it is cut by a circular saw into four-sided strips of a proper length, and are so arranged as to thickness that two of them together form a square of which one piece is thicker than the other, so as to admit the groove cut to receive the lead, to be confined to one piece only—this groove being made by a common plough plane.

The lumps of plumbago are cut into slices about the thickness of a shilling, by a thin circular saw; the slices being of various sizes, from one to two inches long, and varying in breadth.

In preparing the cylindrical leads for the "patent" pencil cases, for which Mr. Mordan took out a patent, the plumbago slices are cut into square prisms a little larger than are ultimately required; and these prisms are brought to the desired cylindrical form by a gradual process of change, produced by an ingenious contrivance. A series of three different sized circular holes are cut in pieces of ruby; the first of which is of such a size as to convert the square prism of black lead into an eight-sided prism, by cutting off the sharp edge: this eight-sided prism is then converted into one of sixteen sides, by thrusting it through the next smaller hole: and lastly, the cylindrical form is given by the third hole which is just the size required. The manner of thrusting out the lead in a "Mordan's" pencil-case with a little pin inside, will give a good idea of the action of the wire and tube in the above process.

The rubies are worn out in three or four days. Steel does not last above as many hours. So that the ever-pointed pencils are necessarily costly, six of them being sold for 2*s.* 6*d.* If they are cheaper than this we may be sure that they are adulterated. In Paris, when you buy a sheet of paper in a stationer's shop, some of these pencils are added to the purchase. Now these are formed of a mixture of plumbago, fuller's earth, and vermicelli.

There is no patent which has been more infringed on than that of Mordan's, for ever-pointed pencils. Birmingham is the source of this infringement, where they are sold as low as three farthings each, formed of composition. A thousand persons are now engaged in the manufacture of these pencils and cases.

To return to the cedar pencils:—One edge of a slice of plumbago being made straight and even, it is dipped in glue, and inserted into the groove cut in the thicker half of the cedar stick. With a sharp tool a cut is made on each surface of the slice, close to the wood, and the piece can then be broken off, leaving a little prism of lead in the groove. The straight edge of the slice is again dipped in glue, and inserted at the end of the first piece, and again cut off, till the whole length of the groove is filled. The surface of the wood is then smoothed down level, and the other half is glued on, thus making a square black-lead pencil.

The square pencil is brought into the cylindrical form by passing it through a hole in an iron or steel puppet of the exact size of the pencil, and forced along by the workman. On the other side of this puppet is a revolving apparatus, which cuts the pencil round; it consists of two guages and a small plane iron, revolving round an open centre. Beyond this is a cylindrical hole in a steel plate; as soon, therefore, as the first edge of the pencil is cut round, it is forced into this circular hole, and before the workman has lost the means of pushing it forward at the end that is square, the cylindrical end is pushed through the circular hole, so as to enable him to seize it with a pair of wooden nippers. It is thus pushed and drawn entirely through, and comes out cylindrical and polished, for the hole being a little smaller than the pencil, the latter is compressed in the act of passing through.

The pencils usually hawked about the streets of London are made with the powder of black lead, mixed with melted sulphur, and then poured into moulds, which are frequently reeds or rushes. Common carpenter's pencils are formed in this way, and answer well enough for the purposes to which they are applied. This mode, however, relates to those common pencils in which the lead (so called) is unusually thick; but the most successful attempt at deception is where the pencil has all the outward form and semblance of being well made, but where a process of anatomization shows the purchaser that the amount of black lead is marvellously small,—the central part of the groove being filled with a different substance. In common pencils, gum-arabic and resin are often mixed with the plumbago.

Genuine cedar pencils must cost at least sixpence each. Pencils of a spurious kind are, however, sold as low as 4½*d.* per dozen. The melting or softening of the lead when held in a candle, or applied to a red-hot iron, and yielding a blueish flame with a strong smell like that of burning sulphur, will at once detect the nature of their composition. Pencils so made are of a very bad kind; they are hard, brittle, and do not cut or make a mark freely, either on paper or on wood, rather cutting or scratching them than leaving a coloured stroke.

Drawing pencils are distinguished by the hardness or softness of the selected specimens of plumbago from which they are manufactured, and, accordingly, those made from the hard mineral, have H or H H stamped upon the cedar, and those of a soft or very soft nature are distinguished by B or B B, technically, however, B and double B, as in the former case H and double H.

Black-lead pencils appear to have been known for nearly two centuries, for a writer of about 200 years ago, says,—"Of late black lead is curiously formed into cases of deal or cedar, and so sold as dry pencils something more useful than pen and ink."

NOTES ON FOREST TREES. No. XXII.

THE GREAT-FLOWERED MAGNOLIA
(*Magnolia grandiflora.*)

THE different species of Magnolia form the most beautiful objects in the scenery of a North American forest: in their native country they well deserve the name of forest-trees, but in Europe they seldom attain a sufficient size to entitle them to any other appellation than that of shrubs.

The *Magnolia grandiflora*, the big laurel, or tulip-tree of the French Canadians,—but this last name is more generally applied to another tree, (*Lyriodendrum tulipifera*,)—is one of the most distinguished of its tribe. Of all the trees of North America, east of the Mississippi, the big laurel is the most remarkable for the majesty of its form, the magnificence of its foliage, and the beauty of its flowers. It claims a place among the largest trees of the United States, and sometimes, though rarely, reaches ninety feet in height, and two or three feet in diameter, but its ordinary stature is from sixty to seventy feet. Its trunk is commonly straight, and the summit is nearly in the shape of a regular pyramid. Its leaves are like those of a laurel, but much larger, being from seven to eight inches in length; they are glossy, evergreen, and of a leathery substance. The flowers are white, of an agreeable odour, and seven or eight inches in diameter; they are larger than those of any other tree with which we are acquainted, and on detached trees are commonly very numerous. Blooming in the midst of rich foliage, they produce so fine an effect, that those who have seen the tree in its native soil agree in considering it as one of the most beautiful productions of the vegetable kingdom.

The fruit is a fleshy, oval cone, about four inches in length; it is composed of a great number of cells, which, at the age of maturity, open longitudinally, showing two or three seeds of a vivid red colour. The seeds soon after quit the cells, and for some days remain suspended from the cone, each attached to the bottom of its cell by a white filament.

The wood of the Magnolia is white and soft, but much inclined to warp, especially if exposed to the weather; on this account it is only used in the interior of buildings. The beauty of this tree has caused its introduction into the shrubberies and parks of Europe, but it is rarely able to endure the severity of our winters, in the open air, further north than the south of England; and, as we have already observed, its appearance will never bear a comparison with its kindred in the American forests.

The beautiful genus contains many ornamental trees and shrubs which have been partially naturalized in the gardens of the milder parts of Europe, where they produce a pleasing effect by the elegance of their form, the shape and magnitude of their leaves, the sweet scent of their large and splendid flowers, and the brilliant colours with which some of them are decorated; the wood itself is partially aromatic. The leaves, in some species, remain on during the whole year; in others they are shed at the beginning of the winter. The name of Magnolia was given to these trees by Linnæus, in honour of a celebrated French botanist, named Peter Magnol, who flourished in the seventeenth century.

The Magnolia can be propagated by seeds, placed in a hot-bed under a frame; but as the seeds seldom reach maturity in our climate, the most usual method of producing new plants is by means of layers, which are prepared by covering the lower branches with earth. These trees succeed best in clayey ground, mixed with a little black mould.

THE ADVANTAGES OF A BOOK.

Of all the amusements which can possibly be imagined for a hard-working man, after his daily toil, or in its intervals, there is nothing like reading an entertaining book, supposing him to have a taste for it, and supposing him to have the book to read. It calls for no bodily exertion, of which he has had enough or too much. It relieves his home of its dulness and sameness, which, in nine cases out of ten, is what drives him out to the alehouse, to his own ruin and his family's. It transports him into a livelier, and gayer, and more diversified and interesting scene, and while he enjoys himself there he may forget the evils of the present moment, fully as much as if he were ever so drunk, with the great advantage of finding himself the next day with his money in his pocket, or at least laid out in real necessaries and comforts for himself and his family,—and without a headache. Nay, it accompanies him to his next day's work, and if the book he has been reading be anything above the very idlest and lightest, gives him something to think of besides the mere mechanical drudgery of his every-day occupation,—something he can enjoy while absent, and look forward with pleasure to return to.

But supposing him to have been fortunate in the choice of his book, and to have alighted upon one really good and of a good class. What a source of domestic enjoyment is laid open! What a bond of family union! He may read it aloud, or make his wife read it, or his eldest boy or girl, or pass it round from hand to hand. All have the benefit of it—all contribute to the gratification of the rest, and a feeling of common interest and pleasure is excited. Nothing unites people like companionship in intellectual enjoyment. It does more, it gives them mutual respect, and to each among them self-respect—that corner-stone of all virtue. It furnishes to each the master-key by which he may avail himself of his privilege as an intellectual being, to

> Enter the sacred temple of his breast,
> And gaze and wander there a ravished guest
> Wander through all the glories of his mind,
> Gaze upon all the treasures he shall find.

And while thus leading him to look within his own bosom for the ultimate sources of his happiness, warns him at the same time to be cautious how he defiles and desecrates that inward and most glorious of temples.—SIR JOHN HERSCHEL.

THE books of nature and of revelation equally elevate our conceptions and invite our piety: they mutually illustrate each other: they have an equal claim on our regard, for they are both written by the finger of one, eternal, incomprehensible God.—WATSON.

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